

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>U30050PCT</b>	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. <b>PCT/EP2004/005210</b>	International filing date ( <i>day/month/year</i> ) <b>14 May 2004 (14.05.2004)</b>	Priority date ( <i>day/month/year</i> ) <b>20 May 2003 (20.05.2003)</b>
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant <b>HUMBOLDT-UNIVERSITÄT ZU BERLIN</b>		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input checked="" type="checkbox"/> | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report <b>24 April 2006 (24.04.2006)</b>
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Ellen Moyse</div>
Telephone No. +41 22 338 89 75	

# PATENT COOPERATION TREATY

**Translation**

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**U30050PCT**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/EP2004/005210**

International filing date (day/month/year)

**14.05.2004**

Priority date (day/month/year)

**20.05.2003**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**HUMBOLDT-UNIVERSITÄT ZU BERLIN**

1. This opinion contains indications relating to the following items:

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input checked="" type="checkbox"/> | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application  |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
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Box No. II

Priority

1. ☒ The following document has not yet been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/005210

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability:  
citations and explanations supporting such statement**

<b>1. Statement</b>			
Novelty (N)	Claims	3-11, 13, 16-29	YES
	Claims	1, 2, 12, 14, 15	NO
Inventive step (IS)	Claims	13, 16-29	YES
	Claims	1-12, 14, 15	NO
Industrial applicability (IA)	Claims	1-29	YES
	Claims		NO

**2. Citations and explanations:**

1 In the present report, reference is made to the following documents:

D1: WO 96/29447 A (QUEEN'S UNIVERSITY) 26 September 1996 (1996-09-26)

D2: KINUMI TOMOYA ET AL: "Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry using an inorganic particle matrix for small molecule analysis" JOURNAL OF MASS SPECTROMETRY, vol. 35, no. 3, March 2000 (2000-03), pages 417-422, XP009037481 ISSN: 1076-5174

D3: WINKELMANN M ET AL: "Chemically patterned, metal oxide based surfaces produced by photolithographic techniques for studying protein- and cell-surface interactions I: Microfabrication and surface characterization" BIOMATERIALS, ELSEVIER SCIENCE PUBLISHERS BV., BARKING, GB, vol. 24, no. 7, March 2003 (2003-03), pages 1133-1145, XP004401490 ISSN: 0142-9612

2. The present application does not meet the requirements of PCT Article 33(1), because the

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

subject matter of claims 1, 2, 12 and 15 is not novel (PCT Article 33(2)).

Document D1 discloses a substrate having a film which consists of metal oxide particles. This document is prejudicial to the novelty of the subject matter of claims 1 and 2.

Document D2 discloses a sample carrier for MALDI which consists of metal oxide particles. This document is prejudicial to the novelty of the subject matter of claims 1, 2, 12 and 15.

Document D3 discloses metal oxide surfaces that are used in mass spectrometry. This document is prejudicial to the novelty of the subject matter of claims 1 and 2.

3. Dependent claims 3-11 contain no features which, in combination with the features of any claim to which they refer back, meet the PCT requirements for inventive step, since their subject matter relates to any desired embodiments which are not essential for the invention.

The object of the present invention is to facilitate the detection of phosphorylated/sulphatized bio-polymers, in particular peptides/proteins, including in complex mixtures. This problem is solved by using the sample carrier of claims 13, 16, 17, 24, 25 and the methods and uses of claims 18-23, 26-29. This proposed solution involves an inventive step

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INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability:  
citations and explanations supporting such statement

(PCT Article 33(3)), because it is not obvious from the known documents of the prior art.

4. From the description on page 2 and 4, it follows that the feature in claim 12 is essential for the definition of the invention.
- Since independent claim 1 does not contain this feature, it does not meet the requirement of PCT Article 6 in combination with PCT Rule 6.3(b) that each independent claim must contain all technical features that are essential for the definition of the invention.